REMARKS

Reconsideration and allowance of this application are respectfully requested in view of the following explanations and remarks.

In a first Office Action dated 9/22/04, three references were cited: Devine et al (U.S. 5,720,438) Pearson (U.S. 4,884,756), and Buehler et al (U.S. 5,364,589). Claim 11 was deemed to be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. The Examiner pointed out that Devine et al (5,720,438) fails to teach or suggest connecting the exhaust to all of the grinding and grating means, the upwardly inclined screw conveyor, and the vertical screw conveyor, as recited in provisionally allowable claim 11. A first amendment dated 12/21/04 was filed in response to the first amendment amending base claims 1 and 8 to incorporate the allowable subject matter.

In a second Office Action dated March 10, 2005, the Examiner withdrew the allowability of the claims and cited the same three references: Devine et al (U.S. 5,720,438), Pearson (U.S. 4,884,756), and Buehler et al (U.S. 5,364,589), and a newly discovered reference Kami (U.S. 5,698,095). A second amendment dated 7/14/05 was filed in response to the second amendment to more clearly distinguish the claimed invention over the combination with the newly cited reference.

In the present Office Action dated 9/21/05, which was made final, the Examiner indicated that the applicant's arguments with respect to the previous rejection under the newly cited Kami reference were persuasive and withdrew the rejection, but, "upon further reconsideration", has now made a new ground(s) of rejection based on the same three references: Devine et al (U.S. 5,720,438), Pearson (U.S. 4,884,756), and Buehler et al (U.S. 5,364,589), and another newly discovered reference Snaper (U.S. 6,536,438).

MPEP Section 706.07 provides that before final rejection is in order a clear issue should be developed between the examiner and applicant. To bring the prosecution to as speedy conclusion as possible and at the same time to deal justly by both the applicant and the public, the invention as disclosed and claimed should be thoroughly searched in the first action and the references fully applied; and in reply to this action the applicant should amend with a view to avoiding all the grounds of rejection and objection. Switching from one subject matter to another in the claims presented by applicant in successive amendments, or from one set of references to another by the examiner in rejecting in successive actions claims of substantially the same subject matter, will alike tend to defeat attaining the goal of reaching a clearly defined issue for an early termination...The applicant who is seeking to define his or her invention in claims that will give him or her the patent protection to which he or she is justly entitled should receive the cooperation of the examiner to that end, and not be prematurely cut off in the prosecution of his or her application...The examiner should never lose sight of the fact that in every case the applicant is entitled to a full and fair hearing, and that a clear issue between applicant and examiner should be developed, if possible, before appeal.

Therefore, it is respectfully submitted that the finality of the rejection may be premature since applicant has not had an opportunity to distinguish the claimed invention over the newly cited reference and grounds of rejection, and it is respectfully requested that the finality of the rejection be reconsidered and withdrawn.

On page 2, paragraph 2, of the present Office Action, claims 1-4, 8, 12-15, and 17 were rejected under 35 U.S.C. 103(a) as being unpatentable over Devine et al (U.S. 5,720,438) in view of Pearson (U.S. 4,884,756), and the newly discovered reference Snaper (U.S. 6,536,133).

Applicants' agent would first like to discuss the Devine et al (US 5,720,438) reference, and then the proposed combination.

The Examiner stated that Devine et al (US 5,720,438) teaches a method and process according to the claims, except that Devine et al employs two separate grinding steps to achieve the necessary size reduction, does not spray the waste during the grinding steps, and does not teach using the exhaust from the generators to heat the waste.

The Examiner also noted that drying of the waste in Devine et al (US 5,720,438) is achieved by using the hot air generated by the heated grinding plate (29) which acts as a heater, and took the position that because the grating means, screw conveyor, grinding means, and immersion means are within an enclosed system, that the hot air created at (43) will flow through the system to dry the waste at all points within the system.

As noted on page 6 of the present application, Devine et al, U.S. Pat. No. 5,720,438 is commonly owned with the present invention, and thus the present application and the reference were, at the time the invention was made, owned by, or subject to an obligation of assignment to, the same person, Thomas J. Devine, (Common Ownership Statement).

Also, at the time of the present invention, the present application and the reference were both licensed to Med-Shred, Inc. (www.medshred.com), a Texas-based corporation that utilizes mobile waste processor units and the method in accordance with the present invention to provide on-site and off-site waste treatment services for hospitals, clinics, and doctors offices.

The first mobile units produced by Med-Shred, Inc. were built in accordance with Devine et al (US 5,720,438). These units had a first grinder/grater (28) disposed above the intake to the inclined screw conveyor and a second grinder/grater (43) disposed at the discharge end, each having a grating plate (29) with a pair of concave surfaces containing a plurality of apertures. In the first grinder/grater (28), the blade knives were rotated at about 46 rpm against two apertured concave surfaces of the grating plate to cut and grind the bags of waste material to grate the materials into particles of from 1/2" to 2" in size. In the second grinder/grater (43), the blade knives were rotated against a single apertured concave surface of the grating plate at about 1700-1900 rpm (a substantially higher speed than the first), and the apertures in the grating plate were sized smaller to further grate the particles and reduce them into particles of from about 1/8" to

1/2" in size. The grating plate (29) of the second grinder/grater (43) was heated by the friction of the blade knives rotating at the higher rpm against the apertured concave surface, and the blade knives also acted as fan blades to force the hot air generated by the heated grating plate through the particles to dry the particles, further facilitated by the vacuum or negative pressure produced by the fan of the hepa-filter.

After operating the units over a period of time, it was discovered that reducing the materials to a larger particle size in the first grinding/grating operation resulted in producing larger particles of the shredded plastic material of the "red bag" that contained the infectious medical waste; and that the heat of the smaller apertured grating plate (29) of the second grinder/grater (43) would melt the larger particles of the shredded plastic bag material and the larger size gummy melted plastic material would stick to the grating plate, and tend to clog the smaller apertures, thereby significantly reducing or preventing air flow and the ability of the hot air to flow through the enclosed system.

Thus, merely because the grating means, screw conveyor, grinding means, and immersion means are within an enclosed system, it does not necessarily follow that the hot air created at (43) will flow through the system to dry the waste at all points within the system due only to the rotating fan blades and the vacuum or negative pressure produced by the fan of the hepa-filter, as taught by Devine et al (US 5,720,438).

The present invention is a result of ten years of research and development and building seven prototype units. It was discovered through extensive research and testing that the problem of the larger particle size (including larger particles of the plastic bag material) could be overcome, and that the smaller particle size could be accomplished in a single grinding/grating operation, by replacing the two grinder/graters with a single grinder/grater having a different

rotating blade knife and slotted grating plate configuration. It was also discovered through extensive research and testing that the problem of significantly reduced hot air flow through the enclosed system caused by the plastic bag material sticking and clogging the apertures of the grinder/grater could be overcome by connecting the exhaust of the petroleum fuel engine of the generator in direct communication with the enclosed system. Also as a result of these improvements, the process of treating infectious waste material is accomplished more efficiently, and it was found that the horizontal conveyor between the inclined conveyor and the vertical conveyor, and the second generator could be eliminated. Thus the present invention accomplishes the process of treating infectious waste material more efficiently, with less equipment, in fewer steps and in less time, and the system can be housed in a much small trailer chassis.

The Examiner stated that Pearson teaches the use of a "single disintegrator" (17) in a preliminary step to achieve the necessary size reduction, and sprays the waste at several points during the grinding, and took the position that it would have been obvious to construct the grinder of Devine et al in a manner to achieve the necessary size reduction, and thereby eliminate the necessity of a second grinder and the second conveyor.

It is respectfully submitted that Pearson (US 4,884,756) "teaches away" from the Examiner's interpretation of a "single disintegrator" (17). To the contrary, Pearson states at column 1, lines 51-53 that "The waste enters through a receiving area and is shredded into smaller pieces of particulate matter by means of a series of disintegrators". Pearson shows the disintegrator (17) in FIG. 1 as an assembly comprising three shredders (23, 25, 27) and teaches at column 3, lines 4-6 that " shredders (23, 25, 27) are vertically disposed in tandem for successively reducing the waste into smaller pieces".

Contrary to the Examiner's interpretation, the Pearson (US 4,884,756) reference does not suggest the use of a "single disintegrator" (17) in a preliminary step to achieve the necessary size reduction. Furthermore, Pearson does not teach or suggest heating the waste materials at all. The Pearson disclosure is also silent as to the type of disinfectant fluid used and whether the material is discharged in a soaked condition or a dried condition.

Thus, neither Devine et al (US 5,720,438), nor Pearson (US 4,884,756) alone or in combination teach or suggest the use of a single grinding and grating means in a preliminary step to achieve the necessary size reduction, nor eliminating the necessity of a second grinder. Instead, Devine et al teaches two grinding/grating means and Pearson teaches a series of disintegrators (three grinders), and thus "teach away" from the proposed modification.

The Examiner stated that the newly cited reference, Snaper (US 6,536,133), teaches the use of heat from an internal combustion engine (ICE) carried by a harvester which is applied to a crop in the form of an air stream, and took the position that it would have been obvious to employ the use of engine heat, as taught by Snaper, to the method and apparatus of Devine et al.

It is submitted that the newly cited reference, Snaper, clearly "teaches away" from the Examiner's interpretation that exhaust heat from an ICE is applied to a crop in the form of a heated air stream. To the contrary, at column 3, lines 34-42, Snaper states that "**The exhaust gases are not intended to be applied to the crop itself** because of their pollutant load. **There can be no direct contact with the crop**. Instead, **heat exchangers are provided which extract the heat from both of these sources**" (the engine coolant and the engine exhaust gases). A typical **engine radiator** is a suitable device for the **liquid/gas transfer of engine heat to an incoming ambient airstream**. Any suitable **gas/gas heat exchanger can be utilized to exchange heat from the exhaust gases to an incoming ambient airstream**.

Snaper shows in FIG. 1, and describes in column 4, that the exhaust gas outlet (37) of the engine (23) is passed through **an exhaust heat exchanger** (43) which is formed in two segments (44) and (48) joined in series. The first **exhaust heat exchanger segment (44) receives exhaust gas from the engine** and has an exhaust gas outlet (47) connected to the exhaust gas inlet (49) of the second segment (48) by conduit (50). The **exhaust gas outlet (51) of the second heat exchanger segment (48) connects to an exhaust control device (52) such as a muffler, which in turn discharges the engine exhaust to atmosphere**.

Snaper teaches that a first blower (60) provides ambient air under pressure through the first **exhaust heat exchanger segment (44), and the air** heated in the first segment exits through a heated air outlet (63) to a conduit (64) which in turn is connected to a fluidic pump (65) at the bottom of a shaft (96). The heated **ambient air** from the first heat exchanger segment (44) is used to power a lift and apply heat to the crop as the crop travels through a shaft (96) of the lift. A second blower (67) provides **ambient air** under pressure through the second heat exchanger segment (48), and the **heated ambient air** exits through a heated air outlet (70) through a conduit (71) that is connected to an auger (25) for the optional purpose of "pre-heating" the crop to be treated in the system.

Thus, Snaper teaches passing the engine exhaust through heat exchanges and discharging it to the atmosphere, and operates on the principle of **applying only heated ambient air to the crop**, and thus "teaches away" from the desirability of applying the hot exhaust from the engine to the material, and clearly states that "**The exhaust gases are not intended to be applied to the crop itself** because of their pollutant load, and that "**There can be no direct contact with the crop**".

Snaper also clearly teaches away from the desirability of "drying" the crop. Snaper utilizes only ambient air for the optional purpose of "pre-heating" the crop to be treated in the system. Snaper teaches at column 1, lines 43-57, that it is not the object of the invention to "dry" the crop in the sense of desiccation. Crops with moisture are regularly and routinely stored. The function of this invention (Snaper) is to bring down the moisture level to or toward an acceptable level by affordable means. Snaper states at column 2, lines 61-63, that "Again it is emphasized that the objective is to reduce moisture to an acceptable level, rather than to 'dry' the crop."

The present invention, on the other hand, has the petroleum fuel engine exhaust connected in communication with the grinding and grating means, the upwardly inclined screw conveyor, and the vertical screw conveyor, and heats the waste particle material during the steps of grinding, grating, macerating, spraying, immersing and conveying such that it becomes dried as it reaches said upper end of said inclined screw conveyor. In the present invention heat energy is transferred by "convection" (transfer of heat by the circulation of heated air) to the waste material caused by the movement of the hot exhaust gas. This heating method renders the waste material into a substantially dry, fluffy, confetti-like material.

Thus, the proposed combination and modification of Devine et al, Pearson, and Snaper would change the principle of the heating operation of Devine et al, and Snaper, to operate in a manner not intended by their creators.

> If the proposed modification or combination of the prior art would change the principle of operation of the prior art invention being modified, then the teachings of the references are not sufficient to render the claims prima facie obvious. In re Ratti, 270 F.2d 810, 123 USPQ 349 (CCPA 1959). The court held that the "suggested combination of references would require a substantial reconstruction and redesign of the elements shown in [the primary reference] as well as a change in the basic principle under which the [primary reference] construction was designed to operate." 270 F.2d at 813, 123 USPQ at 352.).

Neither Devine et al, Pearson, nor Snaper, alone or in combination teach or suggest connecting the engine exhaust in communication with a grinding and grating means and conveyors, nor heating the waste particle material during the steps of grinding, grating, macerating, spraying, immersing and conveying such that it becomes dried. Devine et al does not teach using the exhaust from the generators to heat the waste material, Pearson does not teach or suggest heating the waste materials at all, and the newly cited reference Snaper teaches away from the desirability of applying the hot exhaust from the engine to the crop because of the pollutant load, and from the desirability of drying the crop.

The advantages of such a combination and modification may seem obvious, but only in hindsight after having read applicant's disclosure, and not from the teachings gleaned from the references alone.

Therefore it is respectfully submitted that the cited combination of Devine et al, Pearson, and Snaper does not teach the combination of elements working together as a whole, as recited in base claims 1 and 8, and that the claims are clearly distinguished over the proposed combination and modification. The remarks set forth above apply equally to claims 2-4, and 12-14 and 17, which include additional limitations of the base claims. Claim 15 has been cancelled.

On page 3, paragraph 3, of the Office Action, claims 5 and 16 were rejected under 35 U.S.C. 103(a) as being unpatentable over Devine et al (US 5,720,438), Pearson (US 4,884,756), Snaper (US 5,698,095), and further in view of Buehler et al (US 5,364,589).

Claims 5 and 16 depend from base claims 1 and 8, respectively, and are directed toward the method of claim 1 including further step of compacting the dry confetti-like material discharged from the enclosed screw conveyor, and the apparatus of claim 8 further comprising compactor means for receiving and compacting the discharged waste particle material.

As discussed above, the proposed combination and modification of Devine et al and Pearson would change the grating/grinding apparatus and method of the references to operate in a manner not shown or suggested by the references, and the proposed combination and modification of Devine et al, Pearson, and Snaper would change the heating apparatus and method of the references, to operate in a manner not shown or suggested by the references.

Applicants are not attempting to claim the step of compacting, nor the compactor means independently apart from the whole combination, nor suggesting that these individual method steps or structural elements be withdrawn from the public domain, but are claiming only the recited specific combination of method steps and structure defined in the limitations of the claims working together as a whole.

Claims 5 and 16 should be considered in their entirety including all of the features and limitations of the base claims. None of these references alone or in combination teach or suggest the method of conducting the hot exhaust of a petroleum fuel engine into the grinding and grating means, the immersion vat means, and the conveyor means, nor the apparatus with a petroleum fuel engine having an exhaust connected in communication with the grinding and grating means, the upwardly inclined screw conveyor, and the vertical screw conveyor for heating the waste particle material during the steps of grinding, grating, macerating, spraying, immersing and conveying, as recited in base claims 1 and 8.

Therefore it is respectfully submitted that the cited combination of Devine et al, Pearson, Snaper, and Buehler et al does not teach the combination of elements working together as a whole, as recited in claims 5 and 16, including the limitations of base claims 1 and 8, respectively, and that the claims are clearly distinguished over the proposed combination and modification.

Accordingly, in view of the foregoing amendments, explanations and remarks it is respectfully requested that the finality of the rejection be withdrawn, that this amendment be accepted and entered, and that claims 1-5, 8 and 12-14 and 17 be allowed and that this application be passed to issue.

Respectfully submitted,

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